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CLAIMS

- 5 1. Generator, preferably for a windmill and especially of the kind driven directly by the rotor of the windmill without any gearbox (5) installed between the rotor and the generator, wherein at least the stator of the generator (12) is made with at least two modules (20) which are fully enclosed and sealed, and that these at least two modules (20) may be mounted and dismantled independently of each other one or more at a time without dismantling the entire winding (25), characterised in that each single stator module (20) is individually contained in an enclosure (23) with a degree of sealing substantially corresponding to the degree of sealing which is desired in the finished generator (12), and that a given number of juxtaposed enclosures (23) abutting on each other form a closed ring of stator modules (20).
- 10 2. Generator according to claim 1, characterised in that each single stator module (20), when they are installed in a stator, together form a closed ring of stator modules having a diameter which does not substantially exceed the diameter of the air gap of the generator.
- 15 3. Generator according to claim 1 or 2, characterised in that each single stator module (20) may be displaced radially on the stator structure with the purpose of adjusting the air gap (A).
- 20 4. Generator according to any preceding claim, characterised in that the magnetic circuit in each single stator module is completely or substantially provided by iron having directional magnetic properties.
- 25 5. Generator according to any preceding claim, characterised in that the generator (12) is mounted on a shaft (14), and the stator during mounting and repair work may be turned in relation to the main shaft (8) of the windmill without this requiring substantial dismantling besides the moment support of the generator.
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6. Generator according to any preceding claim, characterised in that the generator (12) during mounting and repair works may be turned in relation to a main shaft (8) of a windmill, in such a way that each single stator module (20) essentially may be lowered vertically to the ground or sea surface.

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7. Generator according to any preceding claim, characterised in that the stator comprises between 2 and 48 modules (20), preferably 24 modules.

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8. Generator according to claim 1, characterised in that the juxtaposed enclosures (23) have an inner surface facing inward toward the rotor (15) and forming the inner periphery (D) for the stator, that the inner periphery (D) of the stator is circular, that the rotor has an outer periphery (d) which is also circular, and that the air gap (A) between the outer periphery (D) of the rotor and the inner periphery (d) of the stator substantially have a constant width between 2 mm and 10 mm, preferably 5 mm.

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9. Generator according to any preceding claim, characterised in that the width of the air gap (A) between the rotor and the stator may be adjusted individually for each stator module (20) and independently of each other by means of suitable adjusting means, e.g. shims (26), by adjusting a distance between an outer periphery (d) of the stator structure and an inner periphery (D) of a given stator module (20).

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10. Stator module for use in a generator according to any preceding claim, which stator module comprises at least two poles and a number of windings around the poles, characterised in that the stator module is intended for constituting a part of a complete stator, and that the stator module is contained in an enclosure with a degree of sealing corresponding to a given desired degree of enclosure.

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11. Use of a generator according to any preceding claim in a windmill.